

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A fuel injection control system for an internal combustion engine, the internal combustion engine including an intake pipe equipped with a throttle valve, an upstream fuel injection valve provided upstream from the throttle valve, and a downstream fuel injection valve provided downstream from the throttle valve, said fuel injection control system comprising:

means for controlling a fuel injection quantity of each of the fuel injection valves on the basis of plural parameters including a throttle opening and engine speed; and

means for detecting an accelerated driving state to increase and correct the quantity of injection fuel,

wherein said increase in quantity and correction increases the injection quantity of said downstream fuel injection valve,

wherein said means for controlling the fuel injection quantity of each of the fuel injection valves further comprises means for determining a total injection quantity of the fuel injection valves and means for determining an injection rate of each of the fuel injection valves on the basis of the throttle opening and the engine speed, and

wherein said means for controlling the fuel injection quantity of each of the fuel injection valves further comprises means for calculating a total correction factor on the basis of plural parameters including manifold air pressure, intake temperature and cooling water temperature.

Claims 2-3 (Canceled)

4. (Currently Amended) The fuel injection control system for an internal combustion engine according to ~~claim 3~~ claim 1, wherein said means for calculating a total correction factor ~~K_{total}~~ calculates a manifold pressure correction factor ~~K_{pb}~~ , an intake temperature correction factor ~~K_{ta}~~ and a cooling water temperature correction factor ~~K_{tw}~~ on the basis of the manifold air pressure, the intake temperature and the cooling water temperature, respectively, said total correction factor ~~K_{total}~~ being calculated by integrating the manifold correction factor ~~K_{pb}~~ , the intake temperature correction factor ~~K_{ta}~~ and a cooling water temperature correction factor ~~K_{tw}~~ .

5. (Original) The fuel injection control system for an internal combustion engine according to claim 1, wherein said means for controlling the fuel injection quantity of each of the fuel injection valves further comprises means for determining an injection quantity of the fuel injection valves, said means for determining the quantity of the fuel injection valves including means for determining an injection quantity of the upstream fuel injection valve and means for determining an injection quantity of the downstream fuel injection valve.

6. (Currently Amended) A method of fuel injection for an internal combustion engine, the internal combustion engine including an intake pipe equipped with a throttle

valve, an upstream fuel injection valve provided upstream from the throttle valve, and a downstream fuel injection valve provided downstream from the throttle valve, said method comprising the steps of:

controlling a fuel injection quantity of each of the fuel injection valves on the basis of plural parameters including a throttle opening and engine speed; and

detecting an accelerated driving state to increase and correct the quantity of injection fuel,

wherein said increase in quantity and correction increases the injection quantity of said downstream fuel injection valve,

wherein said step of controlling the fuel injection quantity of each of the fuel injection valves further comprises the steps of determining a total injection quantity of the fuel injection valves and determining an injection rate of each of the fuel injection valves on the basis of the throttle opening and the engine speed, and

wherein said step of controlling the fuel injection quantity of each of the fuel injection valves further comprises the step of calculating a total correction factor K_{total} on the basis of plural parameters including manifold air pressure, intake temperature and cooling water temperature.

Claims 7-8 (Canceled)

9. (Currently Amended) The method according to ~~claim 8~~ claim 6, wherein said step of calculating a total correction factor ~~K_{total}~~ calculates a manifold pressure correction factor ~~K_{pb}~~ , an intake temperature correction factor ~~K_{ta}~~ and a cooling water temperature correction factor ~~K_{tw}~~ on the basis of the manifold air pressure, the intake temperature and the cooling water temperature, respectively, said total correction factor ~~K_{total}~~ being calculated by integrating the manifold correction factor ~~K_{pb}~~ , the intake temperature correction factor ~~K_{ta}~~ and a cooling water temperature correction factor ~~K_{tw}~~ .

10. (Currently Amended) The method according to ~~claim 5~~ claim 6, wherein said step of controlling the fuel injection quantity of each of the fuel injection valves further comprises the step of determining an injection quantity of the fuel injection valves, said step of determining the quantity of the fuel injection valves including the steps of determining an injection quantity of the upstream fuel injection valve and determining an injection quantity of the downstream fuel injection valve.

11. (Currently Amended) A fuel injection control system for an internal combustion engine, the internal combustion engine including an intake pipe equipped with a throttle valve, an upstream fuel injection valve provided upstream from the throttle valve, and a downstream fuel injection valve provided downstream from the throttle valve, said fuel injection control system comprising:

a total injection quantity determination unit for determining a total injection quantity of fuel to be injected from each of the fuel injection valves;

an injection rate determination unit for determining an injection rate of each of the fuel injection valves;

an injection quantity correction unit for increasing and correcting the injection quantity of the downstream fuel injection valve during acceleration of the engine; and

a correction factor calculation unit for calculating a total correction factor on the basis of plural parameters including manifold air pressure, intake temperature and cooling water temperature.

12. (Canceled)

13. (Currently Amended) The fuel injection control system for an internal combustion engine according to ~~claim 12~~ claim 11, wherein said correction factor calculation unit calculates a manifold pressure correction factor K_{pb} , an intake temperature correction factor K_{ta} and a cooling water temperature correction factor K_{tw} on the basis of the manifold air pressure, the intake temperature and the cooling water temperature, respectively, said total correction factor K_{total} being calculated by integrating the manifold correction factor K_{pb} , the intake temperature correction factor K_{ta} and a cooling water temperature correction factor K_{tw} .

14. (Original) The fuel injection control system for an internal combustion engine according to claim 11, further comprises an injection quantity determination unit including a downstream injection quantity determination unit and an upstream injection quantity determination unit.

15. (Original) a correction factor calculation unit for calculating a total correction factor K_{total} on the basis of plural parameters including manifold air pressure, intake temperature and cooling water temperatureThe fuel injection control system for an internal combustion engine according to claim 14, wherein said upstream injection quantity determination unit determines an injection quantity of the upstream injection valve on the basis of the injection rate of the upstream fuel injection valve and the total injection quantity, and said downstream injection quantity determination unit determines an injection quantity of the downstream fuel injection valve on the basis of the upstream injection quantity and the and the total injection quantity.

AMENDMENTS TO THE DRAWINGS

Attached hereto are six (6) sheets of corrected formal drawings that comply with the provisions of 37 C.F.R. § 1.84. The corrected formal drawings incorporate the following drawing changes:

FIGS. 1-7 have been corrected to provide all lines, numbers and letters uniformly thick and well defined as required by the Examiner.

It is respectfully requested that the corrected formal drawings be approved and made a part of the record of the above-identified application.